

REQUEST FOR RECONSIDERATION

Claims 1-17 remain active in this application.

The claimed invention is directed to a coffee composition, a soluble coffee composition, a packaged beverage filled with a coffee composition and methods for preparing same, comprising 0.01 to 1 wt.% of chlorogenic acids and less than 0.1 wt.% of hydroxyhydroquinone (HHQ), based on the amount of chlorogenic acids.

Coffee compositions are consumed around the world. In spite of a large content of chlorogenic acid, a known antihypertensive agent, coffee has been recognized to increase blood pressure levels. Applicants have discovered that reduction of HHQ content, a component of coffee, in a chlorogenic acid containing coffee composition, can provide an antihypertensive effect for coffee beverages. Such a coffee composition is nowhere disclosed or suggested in the cited art of record.

The rejections of claim 1-2 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942 and Sosuke et al. JP 6-315,434 and of claims 3-15 in further view of various citations to Suzuki et al EP 1186294, Kiefer U.S. 5,588,742, Schlichter U.S. 3,615,666 and Behrman U.S. 2,430,663 are respectfully traversed.

None of the cited references disclose or suggest a composition comprising 0.01 to 1 wt. % of chlorogenic acids and less than 0.1 wt. % of HHQ, based on the amount of chlorogenic acids or no substantial HPLC peak having a retention time corresponding to HHQ.

Slaga et al. has been cited for a disclosure of a coffee composition containing 0.6 wt. % of chlorogenic acid (page 2, example 1) but lacking a disclosure of an HHQ content of less than 0.1 wt.% based on the amount of chlorogenic acids (page 2 of official action).

Stelkens has been cited for a disclosure of treatment of infusions of tea and coffee with activated carbon such that caffeine and other distasteful constituents are adsorbed (page

1, lines 74-84). Treatment with activated carbon results in a decrease in the **total nitrogenous content** (43% reduction) of the coffee infusion (page 2, lines 16-20). There is no express disclosure of removal of HHQ. HHQ is not a nitrogenous compound. Applicants have previously provided evidence that the use of zinc chloride treated activated carbon of an average particles size of 0.2-0.4 mm does not inherently provide an HHQ content as claimed.

JP '434 has been cited for a disclosure of filtering coffee through adsorbents such as activated carbon. The reference report the use of adsorbent for "polymeric brownish black ingredients" to control astringency (see abstract). There is no disclosure to remove HHQ in the reference, but rather that polymeric brownish black ingredients are removed. The office had previously reasoned that there would be motivation to filter coffee with the adsorbent of JP '434 until a desired level/removal of poisonous substance is obtained.

Not notwithstanding applicants' prior evidence using the filtration conditions of JP '434, applicants have conducted additional testing as suggested by the examiner. As evidence that chlorogenic acid and HHQ contents within the claimed range are not inherent to the combined disclosures of Sosuke (JP '434) with Stelkens, applicants enclose herewith the third declaration of Mr. Hideo Ohminami¹, a named inventor of the above-identified application. Using the treatment conditions of Stekens and a coconut husk 1-5 Angstrom of pore size similar to that disclosed in JP '434 Mr. Ohminami prepared coffee compositions by intimate contact for **a period of five minutes**. This **contact time is the same** as disclosed in Stelkens using the **same proportions** as described in Stelkens. The data is summarized below:

| | Without activated carbon (reference) | With activated carbon |
|-----------------------|---|-----------------------|
| Content of HHQ | 0.00399 wt% | 0.00227 wt% |
| HHQ residual ratio | 100 % | 56.9 % |

¹ Applicants note that Mr. Ohminami name may also be spelled Oominami, as it appears on this 1.53 declaration.

| | | |
|--|-------------|-------------|
| Content of chlorogenic acid | 0.72271 wt% | 0.51385 wt% |
| Chlorogenic acid residual ratio | 100 % | 71.1 % |
| Ratio of HHQ / chlorogenic acid | 0.55 % | 0.44 % |

Using the same contacting conditions of five minutes and proportions as described by Stelkens and using a coconut husk activated carbon similar to that disclosed in Sosuke, the combination as proposed by the examiner, a chlorogenic acid and HHQ content as claimed is not realized. Furthermore, there was a detectable HPLC peak corresponding with an HHQ retention time. Using the conditions described by the examiner an HHQ content which is more than 4x greater than the claimed maximum is realized². Accordingly, the claimed coffee composition containing 0.1 wt. % of HHQ relative to chlorogenic acid is not obvious.

While page 9 of the official action suggest that through aggressive dilution an HHQ content as claimed could be obtained, applicants note that the claims are directed to a coffee composition containing 0.01 to 1 wt % of chlorogenic acid and a relative content of HHQ. While the examiner has suggested that a low HHQ content could be obtained through dilution, such dilution would also dilute the chlorogenic acid content such that the ratio of chlorogenic acid/HHQ would remain unchanged. Quite simply the cited art fails to suggest a coffee composition having a chlorogenic acid and a relative HHQ content as claimed.

Furthermore, there would be no motivation to extend the treatment conditions with the adsorbent since the adsorbent is merely used to reduce astringency caused by polymeric brownish black ingredients in a general household coffee maker. There is no suggestion to use such an adsorbent to remove all “poisonous substances.” Since a chlorogenic acid and HHQ content as claimed is not inherent to the extraction procedure of Stelkens combined

² Based on a chlorogenic acid content of 0.51385 wt.%, a relative content of less than 0.1 wt.% of HHQ would allow for an HHQ content of no more than 0.000513 wt. % based on the composition.

with JP '434, the claimed invention is not rendered obvious over this reference and accordingly withdrawal of the rejections under 35 U.S.C. §103 (a) is respectfully requested.

The basic deficiencies of the primary references are not cured by the secondary references as none of the secondary references disclose or suggest a process which would result in a chlorogenic acid and HHQ content, as claimed.

Since the cited references fail to suggest a chlorogenic acid and HHQ content as claimed, the claimed invention would not have been obvious and accordingly, withdrawal of the rejections under 35 U.S.C. §103 (a) is respectfully requested.

Applicants submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

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